Minutes of
TC 4.5 U-factor Subcommittee

Monday, January 29, 2001, 2:15 – 4:15
Chair: John Wright

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1. The meeting was called to order at 2:30 and the attendance sheet circulated. There were no formal items on the agenda for discussion so the attendees were invited to raise topics for discussion.

2. Minutes of the previous meeting (Minneapolis) were not available for approval.

3. Several suggestions were raised regarding possible research topics. Details are included in the subsequent points.

4. Willie Dupont (NFRC) mentioned that there is only a very limited amount of information available regarding the thermal resistance of skylights. Test data for skylights tested at the appropriate slope is starting to become available because hot box test facilities capable of testing sloped samples are now coming online. He asserted that it would be very useful if research were undertaken to quantify the convective heat transfer coefficients for domed skylight glazing cavities.

5. Door U-values are now included in the Fenestration chapter of the HOF and are no longer handled by TC 4.4. John Hogan (City of Seattle) is writing an RFP for research that will generate energy-related information about various commercial doors including large garage-type doors and a revolving door for the HOF. It was pointed out that an important consideration is that many garage doors enclose unconditioned spaces so it is important to classify the doors according to end use. It was also mentioned that in many cases the overriding concern is the infiltration rate of the door because many of these doors are leaky. Dariush Arasteh (LBL) questioned the wisdom of incurring a large expense to test a revolving door because this component contributes only a very small portion to the total building load. John Hogan was convinced to remove solar gain and visible transmittance from the scope of the project while retaining U-factor measurement and adding leakage measurement. Bipin Shah (NFRC) felt strongly that the leakage measurement should added little or no expense to the cost of the U-factor measurement.

6. Interest in tubular skylights has surfaced. Steve Harrison (Queen's University) has recent experience in measuring both the U-factor and daylighting capability of these devices as well as some experience with modeling. The group thought it would be worthwhile to promote research into more detailed heat transfer measurement and the development of a thermal model even though it was acknowledged that the skylight contributes a very small amount to the overall heat loss. The ability to determine performance and rate products will promote product development. Tubular skylights are now tested in a horizontal position. The group felt that this was clearly inappropriate. Jeff Baker (WestLab) will write an abstract and chair a Forum (possible title: Testing Tubular Skylights: When Will We See the Light?) at the next meting in Cincinnati.

7. Questions were raised regarding the detail and validity of the shading attachments model included in the ISO 15099 draft standard. Queens and the University of Waterloo are actively developing a similar model. The issue of validity of the ISO material will have to be addressed by the ISO group.

8. Some discussion was raised concerning flanking losses at the wind/wall interface. Steve Carpenter (Enermodal) has some experience with thermal bridging losses in various wall constructions.

9. Motion to adjourn at 3:45 (Shah/Baker).